



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,963	07/30/2003	Cor F. Van Egmond	2003B071	9547

23455 7590 08/24/2005

EXXONMOBIL CHEMICAL COMPANY
5200 BAYWAY DRIVE
P.O. BOX 2149
BAYTOWN, TX 77522-2149

EXAMINER

BULLOCK, IN SUK C

ART UNIT	PAPER NUMBER
----------	--------------

1764

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/629,963

Applicant(s)

VAN EGMOND ET AL.

Examiner

In Suk Bullock

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) 32-53 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-31 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☒ Claim(s) 1-53 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-31, drawn to a process for converting oxygenate to olefins, classified in class 585, subclass 639.
- II. Claims 32-53, drawn to an apparatus for oxygenate to olefins, classified in class 422, subclass 139+.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus as claimed can be used to practice another and materially different process such as fluid catalytic cracking of naptha.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation with Mr. Frank Reid on July 18, 2005 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-31. Affirmation of this election must be made by applicant in replying to this Office action. Claims 32-53 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Art Unit: 1764

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Information Disclosure Statement

Reference 6,403,584 listed on the IDS, submitted 7/30/2003, was not considered because it appears that the patent numbers were transposed and the reference has no relevance whatsoever to the process for conversion of oxygenate to olefins. The correct reference number 6,403,854 listed on the subsequent IDS, submitted 1/19/2005, has been considered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

Art Unit: 1764

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 and 3-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al (6,403,854).

The Miller reference teaches a process for producing light olefins from an oxygenate (methanol) feedstream comprising quenching the effluent with an aqueous stream in a two-stage quench process to facilitate the separation of hydrocarbon gases from any entrained catalyst fines, remove water and any heavy byproducts such as C₆+ hydrocarbons (col. 2, lines 35-44 and col. 5, lines 37-48). The oxygenate conversion process comprises contacting the preheated feed at conversion conditions, in a fluidized bed reactor, with a molecular sieve catalyst (SAPO-34 and SAPO-17) to produce an effluent stream comprising light olefins, impurities, water, unreacted oxygenates, and catalyst fines (col. 3, lines 6-40 and col. 6, lines 50-54). During the oxygenate conversion reaction, a carbonaceous material, i.e, coke, is deposited on the catalyst.

Art Unit: 1764

During the conversion process a portion of the coked catalyst is withdrawn from the reaction zone and regenerated to remove at least a portion of the carbonaceous material and returned to the oxygenated conversion reaction zone. See col. 7, lines 15-37. The effluent stream is cooled and then passed to a first stage quench tower of a two-stage quench zone. An overhead stream comprising the light olefins and a first stage bottoms stream comprising catalyst fines, impurities, and water is withdrawn from the first stage quench tower. A portion of the first stage bottoms stream is injected with a neutralizing stream and returned to an upper portion of the first stage quench tower as a quench pumparound stream. The cooled first stage overhead stream is passed to the second stage quench tower to separate the light olefins from water to provide a vapor product stream comprising light olefins and a purified water stream. A first portion of the purified water stream is returned to an upper portion of the first stage quench tower. A second portion of the purified water stream is cooled and returned to an upper portion of the second stage tower. A third portion of the purified water stream is passed to a water stripper column to provide a highly purified water stream. This highly purified water stream can be withdrawn for reuse anywhere in the process as pure water. The vapor product stream is compressed and passed to a series of steps to produce the individual light olefin products. See col. 12, line 63 thru col. 14, line 52 and Figure 4.

The difference between Miller and the claimed invention is that Miller does not explicitly state that the second quench medium is substantially free of catalyst fines.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the disclosure of Miller by employing a second

Art Unit: 1764

quench medium substantially free of catalyst fines because Miller has disclosed that the highly purified water stream from the process can be used anywhere in said process as pure water (col. 14, lines 7-8). Utilizing highly purified water as a second quench medium would lead to high purity olefin products because no additional undesirable catalyst fines would be introduced to the second quench system.

With respect to the variously claimed equipments, i.e., chimney tray and demisting device, these are all conventional equipments employed in the art of hydrocarbon conversion process.

Allowable Subject Matter

Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: U.S. Patent 6,870,072 discloses a quench medium including oxygenated hydrocarbons but there is no motivation to modify the disclosure of Miller by utilizing the claimed oxygenate selected from the group consisting of methanol and ethanol.

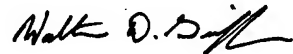
Any inquiry concerning this communication or earlier communications from the examiner should be directed to In Suk Bullock whose telephone number is 571-272-5954. The examiner can normally be reached on Monday - Friday 7:30-4:00.

Art Unit: 1764

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

I.B.


Walter D. Griffin
Primary Examiner